

SEYMOUR DUNCAN RESEARCH

T A R ATM

**True Acoustic ResponseTM
Amplifier**

OWNER'S MANUAL

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WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

TO REDUCE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

TO REDUCE RISK OF FIRE, REPLACE FUSE ONLY WITH SAME TYPE, AS SPECIFIED.

Introduction

Congratulations on your purchase of the Seymour Duncan **True Acoustic Response™ Amplifier**. This amplifier has been crafted specifically to fill the needs of the acoustic guitarist. Every feature has been specifically chosen to give you an unprecedented amount of control over your sound while allowing the flexibility to handle virtually any playing situation. It is truly a performance system design.

The cabinet and speaker system were designed to hi-fi standards, providing very flat transparent sound with an extended bottom end. Each of the two channels will accept three inputs (Mic, Instrument, & Effects Return) while allowing incredible tone shaping with two sets of 5-band graphic equalizers and a contour switch. Anti-feedback controls in both channels have been optimized to allow very high sound pressure levels without annoying feedback. You can play guitar through one channel, sing through the other, and mix your drum machine in through one of the three-buffered effects loops. In short, we think you will find your TARA amplifier has the flexibility to handle any playing situation, from solo club gigs to studio work.

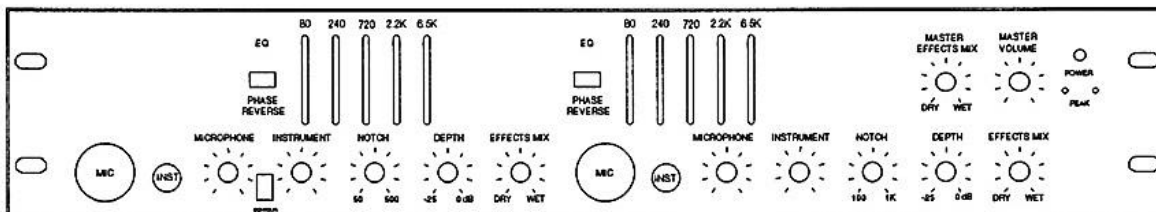
A Discussion on Feedback

An acoustic guitar, which sounds warm, rich and responsive when, played without amplification can feedback annoyingly when amplified. The sound from the speakers interacts with the guitar's natural resonance to cause feedback. There are two dominant resonant sources, the air cavity and the soundboard. The air cavity is the lower of the two, generally falling around 100Hz. The soundboard, which produces 90% of the guitar's acoustic output, resonates around 200Hz.

Our T.A.R.A™. amplifier has several features which are designed to control unwanted feedback. Each channel has a phase switch and a notch filter with variable frequency and depth. Generally, the phase switch is used to knock out the air cavity resonance of the guitar and the notch filter is used to control the soundboard resonance. The phase switch inverts the polarity of the amplifier's output relative to the resonance of the guitar. Changing the phase of the output signal can effectively control the low frequency air cavity resonance, although in very loud settings you may actually need to block the sound hole. The notch filter is very useful in controlling soundboard feedback. Once the notch filter is "tuned" to your guitar's soundboard, the depth control can be used to cut more or less depending on how loud you are playing. You only want to notch out "just enough" to control feedback so that the guitar retains as much of its acoustic characteristics as possible. Proper use of the phase and notch controls will allow you to play at high volume levels without feedback and without unduly compromising the natural timbre of your instrument.

Controls & Features

The Seymour Duncan **T.A.R.A.** Acoustic Amplifier has a wide range of very useful features for getting the best sound out of your acoustic guitar and making the amplifier extremely versatile in all types of performing and recording applications.



Instrument & Microphone Inputs and Volume Controls - Each channel has an instrument input and a microphone input. Each input has its own volume control, so that they can be perfectly balanced in the mix. The microphone input is balanced & low-impedance, and the instrument input is ultra high-impedance (10Meg). The very high impedance of the instrument input allows for better impedance matching with piezo-crystal and piezo-vinyl acoustic pickups, which characteristically have very high output impedances. When the input impedance of an amplifier is much lower than the output impedance of the pickup, the pickup may sound very tinny and brittle.

Notch Filter - The notch filter is very useful in combating regenerative feedback (see section on feedback). It reduces the signal at a particular frequency where the feedback is occurring (such as your acoustic guitar's sound board resonant frequency). The notch filter has two controls: notch frequency and depth. The notch frequency control varies the notch from 50Hz to 500Hz in the left channel (primarily for an acoustic guitar) and 100Hz to 1kHz in the right channel (primarily for microphones). The depth knob controls how deep the notch is, up to -25 dB! Turning the knob counter-clockwise deepens the notch. You should use the depth control to notch out "just enough" of the feedback frequency to stop the feedback, while preserving the natural timbre and characteristics of the acoustic guitar. Although most amplifiers do not offer it, the depth control is essential in maintaining a transparent, flat response.

Phase Reverse Switch - This switch reverses the phase of the amplified guitar signal coming out of the speaker, relative to the guitar. This can be an extremely helpful one-shot cure for feedback. Keep in mind that the air-cavity resonance feedback depends on the distance and direction of the guitar in reference to the amplifier. For example, if the air-cavity resonance is 100Hz, there will be a feedback-canceling "node" every 11.2 feet. Halfway between those nodes are the feedback nodes, where it'll be the worst. Flipping the phase switch changes the feedback nodes into feedback-canceling nodes and vice versa. Direction of the acoustic guitar in relation to the speaker will also affect air-cavity resonance feedback, so the best way to keep this kind of feedback under control is to stay in relatively the same area and facing the same direction.

Graphic Equalizer - The five-band graphic equalizer has frequency centers placed for detailed and thorough control of your tone. All the bands are even in bandwidth except for the lowest band (80Hz), which has been customized with a narrower bandwidth, to

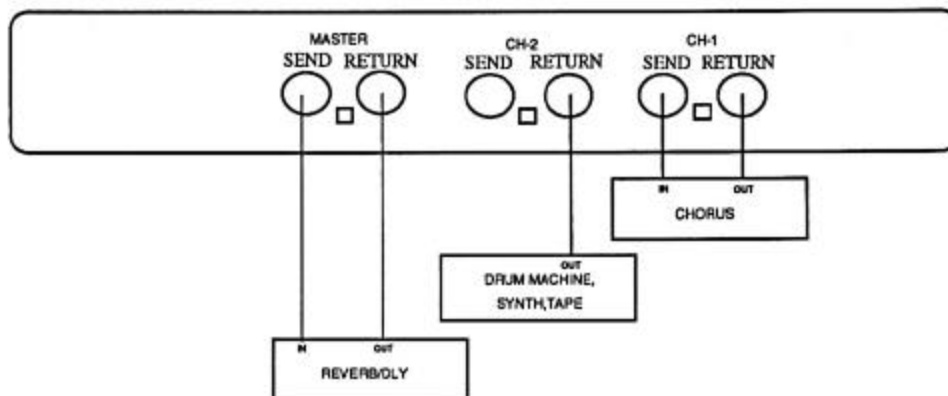
allow the user to boost it for a rich, full sound without boosting the sound board and air-cavity resonant frequencies (around 200Hz). The 240Hz band is particularly useful in reducing the frequencies often associated with acoustic guitar feedback.

Master Volume - This potentiometer is the overall output control for the entire amplifier, and adjusts the volume for all instrument, microphone, and drum-machine inputs.

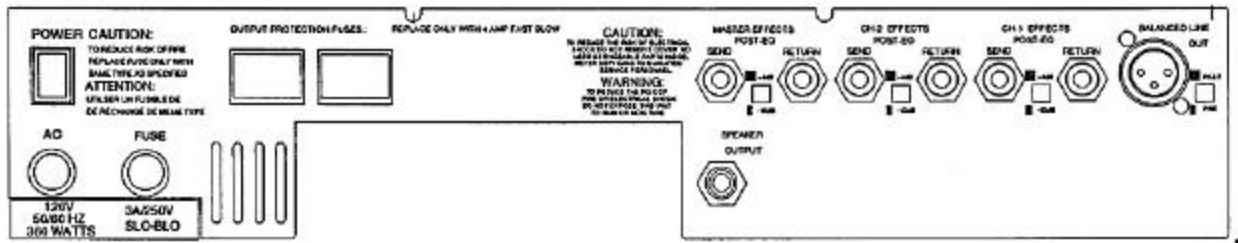
Peak Indicators - The red peak indicator is a warning that the signal going through the preamp is very close to clipping, and should light only occasionally. The green LED indicates that the signal is in the optimal range for the preamp. Running the amp with insufficient signal level can degrade the signal-to-noise ratio. These indicators monitor the levels of all the instrument and microphone inputs. When preparing for a performance, you should go through each instrument and microphone and make sure the green LED is on most of the time during play and the red LED only lights occasionally on the loudest notes.

Note: For proper operation, the signal level should be set with the graphic EQ flat.

Effects Loops - The **T.A.R.A.** amplifier features three effects loops for maximum versatility. Each channel has its own pre-EQ effects loop so that each can have its own effect. There is also an overall post-EQ effects loop, which works on both channels. All of these effects loops are of a professional-quality; "side-chain" type and certain measures should be taken for optimal sound quality. The mix control on the effects unit being used should be turned all the way to "wet". The wet/dry mix is then controlled by the effects mix control on the amplifier itself. This "side-chain" method better preserves the original dry signal and avoids the degradation of the dry signal, which is unavoidable with the commonly used "series" type effects loops. With this configuration, the dry signal is unaffected by the bandwidth and dynamic limitations of the effect unit being used, so the overall sound is more natural. The -10/+4 dB level switches on the back of the amp set the effects loop level to match with all types of outboard gear. In general, the -10dB setting should be used with pedal-type effects & most rack-mount effects, and the +4dB for pro-studio rack-mount effects. Another use of the "side-chain" effects loop is the ability to input pre-recorded music, synthesizer, or a drum machine into the overall mix using the effects return jack. The effect mix control on the amplifier then allows you to mix in the right amount of the auxiliary input.



Sample setup with guitar in channel 1 & vocals and rhythm in channel 2



Balanced Line Out - This output is for Direct Input into a mixer or recording console. This output is switchable between pre-EQ and post-EQ signals using the adjacent push-button switch.

Speaker Output(s) - This jack is the speaker output jack for connecting to a speaker cabinet. For the mono model, this output would normally be connected to the internal speaker in the cabinet. The amp delivers 75 Watts into 8 ohms and 100 Watts into 4 ohms.

Fuses - The main line fuse is a 5A/250V Slo-Blo for 120V & 100V use, and a 2.5A/250V Slo-Blo for 220V and 240V use. To reduce risk of fire, replace fuse only with same type, as specified.

Setting Up for Optimal Performance

A simple step-by-step procedure is outlined below for setting up the amplifier for optimal performance.

- 1. Reset Controls** - Turn the power on, turn down the instrument input & master volume, set EQ flat, and turn notch control all the way clockwise (no cut).
- 2. Set Input Level** - Plug guitar into instrument input, and turn up the input volume until the green LED is on most of the time and the red LED only lights occasionally on the loudest notes.
- 3. Set Tone** - Turn the master volume up to low listening level and set the EQ & contour switch to taste.
- 4. Eliminate Feedback** - Mute the strings with your right hand by the bridge. Turn up the instrument volume until the guitar almost, but not quite, breaks into feedback. Now tap the soundboard with your finger on your right hand while continuing to mute the strings, and you should hear a "ping". Set the notch-filter depth control at 12:00. Now slowly rotate the notch frequency control from about 12:00 to 5:00. At some point the "ping" should disappear and you'll just hear a dull "thunk" every time you tap the top. Now the notch filter is tuned to the soundboard resonance of your guitar. Now bring the master volume up to playing volume. If you get a low rumble or roar when you try to turn up, push the phase button next to the graphic EQ on the channel you're using, to cancel the air cavity resonance. The correct phase depends on the position and

direction of the instrument, so make sure you check the phase in the location where you'll actually be playing, with reference to the amplifier. You'll also find that the louder you turn up, the deeper you'll have to notch out the sound board resonance using the depth control.

Specifications

Power Output: 100Watts into 4 ohms.

Output Type: Quasi-complimentary Bipolar.

Power Amp Signal-to-Noise Ratio: >100dB.

Power Amp Sensitivity for Full Power: 0.8V.

Instrument Input Impedance: 10 Megohms.

Microphone Inputs: Low-Z balanced.

Notch Filter Frequency: Ch.1: 50 - 500Hz.

Ch.2: 100 - 1kHz.

Notch Filter Cut: 0 - 25dB cut.

Dual 5-Band Graphic EQ Frequencies: 80Hz, 240Hz, 720Hz, 2.2kHz, 6.5kHz.

Graphic EQ Operation: \pm 12dB.

Effects Loops:

2 Pre-EQ, 1 Post-EQ.

Switchable drive/return level: +4dB / -10dB.

Wet/Dry mixing with separate blend controls for each loop.

Line Out: Electronically balanced, capable of driving 600ohm load, switchable pre/post EQ.

Contour Switch: Enhances sound of piezo-ceramic saddle-type pickups.

Output Protection Fuses: 4 Amp Fast blow (5 x 20mm)

Voltage Requirements:

100V - Japan

120V - U.S., Canada

220V - Europe

240V - U.K.

Weight:

Mono - 52 lbs

Stereo - 53 lbs plus 35 lbs for the additional cabinet

Head - 15 lbs-mono, 16 lbs-stereo

Dimensions:

Mono - 20-5/8"W x 18-3/4"H x 13-3/8" D

Stereo - 20-5/8"W x 18-3/4"H x 13-3/8" D x two

Warranty Information

FOR YOUR RECORDS:

SERIAL NUMBER _____ DATE OF PURCHASE _____

DEALER _____

KEEP YOUR BILL OF SALE IN A SAFE PLACE.

Please read carefully:

Seymour Duncan amplifiers (hereinafter referred to as the Product) are warranted against defects in workmanship and materials, excluding tubes and speakers covered separately, for a period of one year from date of purchase by the original purchaser. Tubes and speakers are warranted for 90 days from date of purchase. Speaker warranty will be subject to inspection by the Seymour Duncan Factory. Obvious over-powering or abuse will result in warranty denial. This warranty is transferable. Defective parts will be repaired or replaced without charge if the product is returned to a Seymour Duncan Authorized Service Center. In the event a product is to be returned to the Seymour Duncan Factory for repairs, A RETURN AUTHORIZATION MUST BE OBTAINED PRIOR TO SHIPPING BY CALLING OR WRITING THE COMPANY FOR THE RA NUMBER.

When returning, make certain to include a copy of the bill of sale and a detailed description of the problem. Any product shipped must be returned in the ORIGINAL SHIPPING CONTAINER WITH ORIGINAL PACKING MATERIAL and freight prepaid. Transportation charges involved in warranty service are the sole responsibility of the owner.

This warranty does not apply to damage caused by misuse, mishandling, negligence in use or maintenance or storage, and is voided if repairs or adjustments are made after purchase by anyone other than the Seymour Duncan Factory or a Seymour Duncan Authorized Service Center. Seymour Duncan reserves the right to be the sole judge as to the misuse or abuse of the product.

The company assumes no liability for incidental or consequential damages which may result from the failure of this product. Any warranties implied by law are limited to the duration of this express limited warranty.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation on incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

Please return the enclosed warranty card so that we can give you the best warranty service possible.